

Curbs

Design Manual**Chapter 3****Cross Sections**

Originally Issued: 09-01-95

Revised: 01-23-04

This section provides guidelines for the design of curbs on primary highways. For definitions of the various highway types referred to in this section, see Section 1C-1.

General Curb Design Information

The Department recognizes three curb designs:

- 6-inch (150-millimeter) standard curbs
- 4-inch (100-millimeter) sloped curbs
- 6-inch (150-millimeter) sloped curbs

Details of these curb designs can be found in the Road Design Details manual.

The use of other curb designs is discouraged, but may be necessary where site conditions dictate. For projects at spot locations, it is acceptable to use a curb design that perpetuates the design that is predominant in the adjacent roadway sections.

A regulatory speed greater than 35 mph is considered “high-speed” when designing curbs. If possible, curbs should not be used in high-speed locations.

Guardrail and Curbs

It is not desirable to use guardrail alongside curbs. Every effort should be made to remove fixed objects or relocate them outside the clear zone, instead of using guardrail. If there is no other alternative to using guardrail, it may be used alongside a 4-inch (100-millimeter) sloped curb, normally with the installation line at the gutter line. If 6-inch (150-millimeter) curbs are being used throughout the rest of the project, the curb should be transitioned to a 4-inch (100-millimeter) sloped curb throughout the guardrail installation.

Transitional Facilities

Transitional facilities are highways approaching or within urban areas that normally have regulatory speeds between 40 and 50 mph.

Curbs are not desirable on transitional facilities since the regulatory speeds are greater than 35 mph. However, when determining whether or not curbs should be used on transitional roadways you should also consider the best way to handle drainage, the need for access control, the degree of property development, and the presence of pedestrian traffic.

If curbs are being used on transitional roadways, the following guidelines apply:

- If the regulatory speed is 40, 45, or 50 mph, a 6-inch (150-millimeter) sloped curb should be used. The normal offset to the bottom edge of the sloped curb is 2 feet (0.6 meters). This offset should apply to both the median and outside curbs.
- Curbs for stop sign islands should match the design of the curb used on the mainline.

Reduced-Speed Urban Facilities

On reduced-speed urban roadways (regulatory speeds of 35 mph or less), a 6-inch (150-millimeter) standard curb is normally used for controlling surface drainage and access. Curbs for stop sign islands should match the design of the curb used on the mainline. Figure 1 provides typical cross sections for reduced-speed urban facilities.

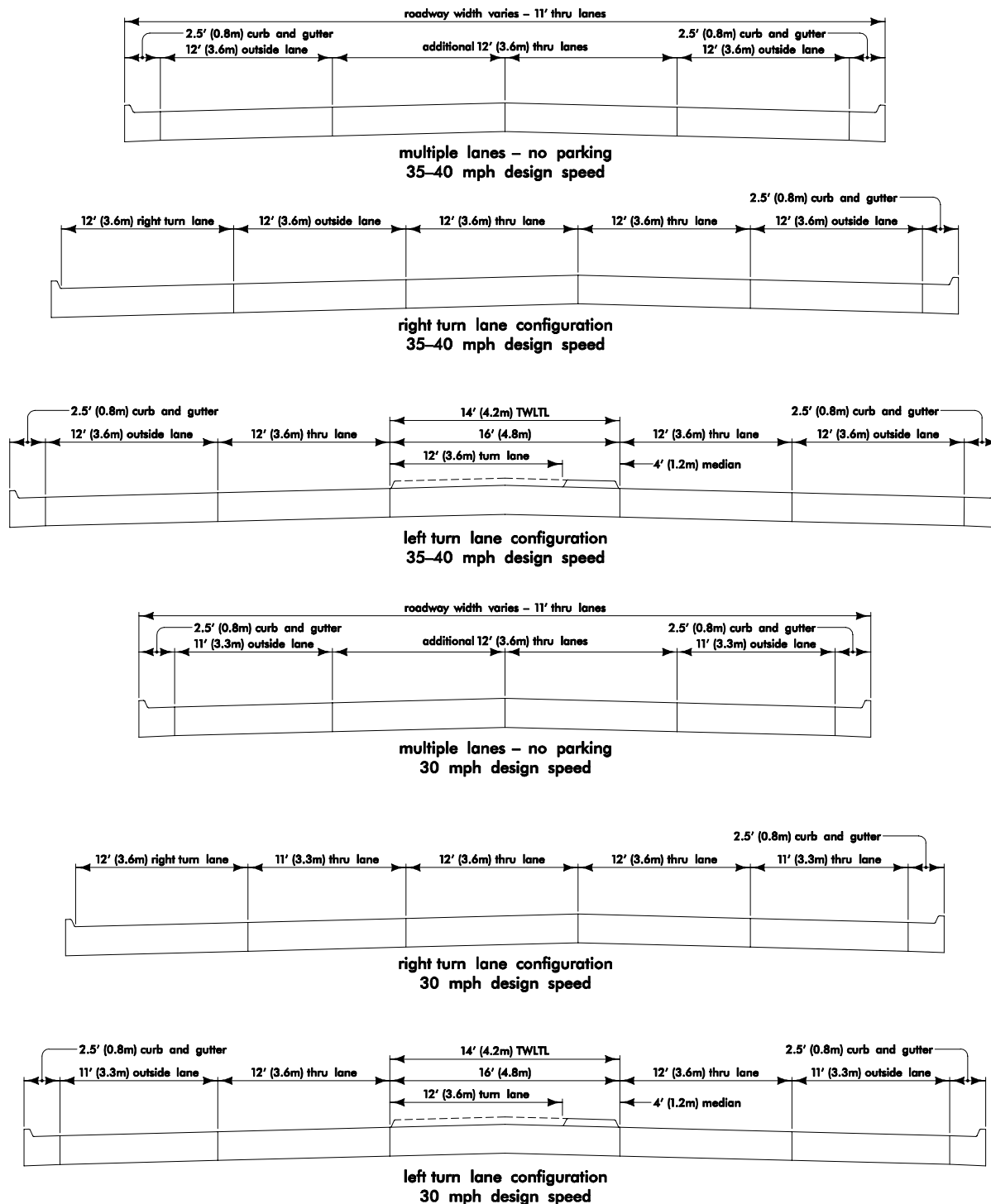


Figure 1: Typical Cross Sections for Reduced-Speed Urban Facilities (adapted from Urban Design Standards for Public Improvements (SUDAS) 2004 Edition, Chapter 5, Figure 3.2).

Freeways, Expressways, Super-Two Highways, and Rural Two-Lane Highways

Freeways, expressways, super-two highways, and rural two-lane highways have regulatory speeds of 55 mph or greater and because of these high speeds, curbs are not desirable. On existing facilities, curbs should normally be eliminated where it is practical to do so. However, in some instances curbs may be necessary because of drainage or right-of-way considerations (in particular for urban freeways). In these cases, the following guidelines apply:

- The Design Engineer should approve the use of any curbs on these high-speed facilities.
- A 4-inch (100-millimeter) sloped curb may be used on the outside edge of a full-width paved shoulder. The shoulder should be paved for the segment where the curb is used. Where surface drainage requirements are unusually high, a 6-inch (150-millimeter) sloped curb may be used instead.
- Painted medians are normally used to channelize intersections. If the intersection requires a raised median to control drainage, the designer may use a 4-inch (100-millimeter) sloped curb. In some cases, 6-inch (150-millimeter) sloped curbs may also be appropriate. In any case, the curb on the median side requires a 6-foot (1.8-meter) offset measured from the edge of the traveled way to the bottom edge of the sloped curb.

Stop sign islands should be designed using 4-inch (100-millimeter) sloped curbs. The designer should offset the island from the edge of traveled way of the mainline by 2 feet (0.6 meters) beyond the normal shoulder width. For traffic on the stop approach, the island should be offset by 2 feet (0.6 meters) from the edge of traveled way. In both cases, this offset is measured to the bottom edge of the sloped curb.